



Vaccine-wary parents spark public health worry

More opt out for fear of reactions, but do they endanger everyone else?

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ASHLAND, Ore. - Isabella Parker knows there are two things a big girl needs before she can go to kindergarten: a new backpack and a set of shots so she won't get sick.

So the brown-eyed 5-year-old doesn't flinch when nurse Katy Cowan jabs two sharp needles quickly into each arm. Within seconds, Isabella is inoculated against diseases once regarded as the scourges of childhood, including measles, mumps, diphtheria, pertussis and polio.

"I think we're protecting our children," explains Vanessa Parker, 29, mother to Isabella and her 8-year-old sister, Haley. "That's a good thing."

But when Isabella shows up at Bellview Elementary on Sept. 8, many of her classmates may not share her status. In Ashland, nearly 30 percent of kindergartners have been issued exemptions for some or all of the vaccines required by state law, a rate seven times the rest of the state and about 12 times the rest of the nation.

That makes this theater town of 21,000 near the Oregon-California border a hotbed for what health officials regard as a rising threat here and across the country: small but growing clusters of parents who seek exemptions to keep their kids from being vaccinated.

Skeptical of government mandates and leery of feared links to disorders from asthma to autism, parents say they're exercising their rights to protect their kids from risk. But health officials say there's no question that the risk of vaccination is far outweighed by the benefits of inoculation, and that those who don't immunize endanger not only their own kids, but also the collective resistance that keeps everyone else safe, too.

"When more than 10 percent of a community opts out of vaccinations, it leaves the entire community at risk because germs have a greater chance of causing an epidemic," said Dr. Ari Brown, an Austin, Texas, pediatrician who represents the American Academy of Pediatrics.

Scientists worry that vaccine resisters increasingly are breaching "herd immunity," the necessary level of protection that keeps disease from spreading. When enough people in a community are immune to a disease, they provide a buffer that keeps germs from infecting those too vulnerable for vaccination, or those for whom a vaccine doesn't work or wears off.

Some diseases, such as mumps, can tolerate a herd immunity threshold as low as 75 percent. But other, more virulent diseases, such as measles or pertussis, also known as whooping cough, require collective immunity of up to 94 percent to avoid infection, according to the federal Centers for Disease Control and Prevention.

Holes in 'herd immunity'

In small communities in states from Washington and Colorado to Vermont and Michigan, vaccine skeptics are drilling wide holes in herd immunity, leaving others at risk, the scientists said.

"Wherever we have looked, we have found pockets of unimmunized people associated with outbreaks," said Dr. Saad B. Omer, an assistant professor with Emory University's Rollins School of Public Health, who has studied vaccination rates extensively.

On Thursday, government health officials reported that the number of measles cases in the U.S. has reached its highest level in over a decade, with nearly half the cases involving children whose parents object to immunizations.

In the first seven months of this year, 131 cases of measles were reported to the CDC, compared to 42 cases in all of last year. Of that total, 112 were unvaccinated or had unknown vaccination status, the CDC said. Some were too young for vaccination, but in 63 of those cases the patient or their parents had refused the shots.

In addition to measles, recent outbreaks of pertussis have underscored the dangerous trend.

In South Whidbey Island, Wash., this summer, Little League teams were eliminated from the regional All-Star Tournament after an outbreak of pertussis. Overall, 88 people were sickened in the Northwest community where one to two cases a year is the norm. Health officer Dr. Roger Case demanded that the teams be pulled, fearing they'd spark an epidemic among players across a wide region.

Low community vaccination levels likely were to blame for the outbreak, Case said. The overall county exemption rate is about 14 percent, but in one local Waldorf School, about 72 percent of children don't have some or all of their shots, records show.

"Herd immunity doesn't work when people who are not part of the herd get sick," Case said.

States require vaccination, but allow exemptions

Certain vaccinations are recommended for babies from birth on, but they're required nationwide for admission to school, and, in many cases, day care or preschool. Home-schooled children aren't included in the mandate.

All states permit medical exemptions for conditions that range from severe allergies and serious immune system problems to neurological disorders. All but two states allow religious exemptions.

Twenty-one states offer a provision for personal belief exemptions, according to the Institute for Vaccine Safety at the Johns Hopkins Bloomberg School of Public Health. That includes Oregon, which offers a broad definition of religion as "any system of beliefs, practices or ethical values."

In states that make it easy to acquire non-medical waivers, exemptions have nearly doubled, rising from 1.26 percent in 1991 to 2.5 percent in 2004, the most recent statistics available, Omer said. Those states with easy access to exemptions were associated with a 90 percent higher incidence of pertussis.

Increased exemptions raise the chances that serious diseases reduced or nearly eradicated in this country could make a comeback, particularly among those too young, too old or too medically compromised to be vaccinated, Omer said.

"They depend on the immunity of their surroundings."

That's just as true for those who choose not to vaccinate. Two years ago, the New England Journal of Medicine recounted the case of a 17-year-old Indiana girl who returned from a trip to Romania and sparked a measles outbreak. Of 500 people attending a gathering the day after she got home, 50 were susceptible to the disease. Of those, 34 came down with measles in the next six weeks, mostly children who had not been vaccinated. Three of the youngsters were hospitalized and the cost to contain the outbreak was estimated at nearly \$168,000.

Only a vaccination rate of about 95 percent in the surrounding community prevented an epidemic, researchers said.

For some parents, however, the risk of contracting the disease is not reason enough to vaccinate.

"I think a child's immune system is so immature," said Jennifer Margulis, 39, an Ashland writer who didn't vaccinate her three children at all for years, and then selectively immunized them only for a trip to West Africa. "You're putting known toxins in a child before they're 2 years old."

Hesperus, 9, Athena, 7, and Etani, 4, have not received standard immunizations given to more than 90 percent of U.S. children eligible to receive them. They've received vaccinations for yellow fever, meningitis,

tetanus and polio, for instance, but not for measles, mumps, rubella, pertussis or chicken pox.

"If you read the list of ingredients about what you're putting intramuscularly into your child, it's scary," said Margulis. "They're not just giving you a little dose of dead bacteria."

Drop in infections and deaths

Scientists could not disagree more strongly. Longstanding immunizations are not only safe, they've contributed to as much as a 90 percent drop in infections and death from vaccine-preventable disease, they say.

At its peak in 1958, before a vaccine was introduced, measles caused more than 763,000 infections and 552 deaths in the U.S. in single year, the CDC said.

But because the vaccines aren't quite 100 percent effective and because protection can wane, even those who are vaccinated can get sick, Omer added.

That's only too clear to Cheri Rae, 55, a Santa Barbara, Calif., mother whose son, Daniel, was 7 and vaccinated when he contracted pertussis from an unimmunized playmate.

"He was as sick as any child I've ever seen," said Rae, noting that four years later, Daniel has only recently stopped taking powerful drugs to combat lingering respiratory effects from the disease. When the issue arose this spring in an ethics column in the New York Times magazine, Rae published a letter protesting the notion that vaccinated children were safe from harm.

"I think it requires thinking a little bit outside your own child and your own family," Rae said. "How does my individual decision affect my neighborhood?"

Weighing the risks

Vaccines do fail sometimes, and they are not without risks, Omer said.

"We know that the risk associated with getting the disease is much higher than the risk of serious side effects after getting the vaccination," he said.

Vaccine critics, however, say such warnings amount to fear-mongering and that public health officials fail to address growing concerns about the possible effects of immunization on individual children.

"They assume that everyone will be exposed and everyone will get sick," said Dr. Sherri J. Tenpenny, medical director of an Ohio clinic that treats many children injured by vaccines. "There are a lot better ways to stay healthy than to inject your body with chemicals."

The federal Vaccine Adverse Event Reporting System, a voluntary program that records bad reactions to immunizations, receives about 30,000 reports a year, with between 10 percent and 15 percent classified as serious, according to the CDC. Though rare, severe problems can occur, including serious allergic reactions, long-term seizures, coma or permanent brain damage. With the DTaP vaccine, the combination shot for diphtheria, tetanus and pertussis, for instance, the CDC estimates severe problems occur in less than 1 in a million doses.

But parents often reject vaccinations not because of these known risks, but because of unproven links to disorders such as asthma, attention deficit disorder, or autism.

Increasingly, parents are opting not to vaccinate or, more often, to vaccinate selectively because they don't trust the safety conclusions of the federal government or medical groups such as the American Academy of Pediatrics, said Barbara Loe Fisher, co-founder and president of the National Vaccine Information Center in Vienna, Va.

"Doctors have become inappropriately comfortable writing off any reaction (to vaccines) as being a coincidence," said Fisher, who believes her oldest son, Christian, developed learning disabilities and attention

deficit disorder after a vaccination in 1980. "People are losing their faith in the system."

Some more vulnerable to vaccines

Mandatory vaccine requirements in many states endanger children who may be genetically vulnerable to reactions, essentially marginalizing their risk for the sake of the larger population, Fisher said.

"Once you decide that individuals are expendable in the name of the greater good, how many is too many?" she said. "You can decide that it's OK to throw some people under the bus because that's the price of doing business."

Skeptics' suspicions are bolstered by cases such as the recent decision that a federal vaccine agency will compensate the family of a 9-year-old autistic girl in Georgia whose parents believe her condition was caused by five simultaneous doses of vaccines. Anti-vaccine activists said the government was conceding a link between immunizations and autism, but government scientists disputed that notion, saying that it was an isolated case that established no proof of a link.

That argument doesn't sway critics, however, including parents like Margulis, who said she relies on her own research skills for information.

"I think doctors tend to be taken back by how much I know," she said, adding later: "I'm a public health official's nightmare, not because I'm not responsible, but because I'm too responsible."

Margulis said she worked hard to boost her children's own resistance to disease. She nursed two of her kids past the age of 4 and said she makes sure they eat healthful foods and get regular exercise. She believes her children's systems are strong enough to tolerate disease — and even hopes that they'll get the chance to gain natural immunity.

"I would love for my children to have measles," Margulis said. "Please get me chicken pox and get me measles."

She rejects the idea that her decision endangers others.

"People say, 'You're putting my kid at risk, but that doesn't make any sense at all,'" she said. "If the vaccine works, I'm just putting *my* child at risk."

As a fellow Ashland parent, Isabella's mother, Vanessa Parker, said she regards the decision not to vaccinate by Margulis and many of her neighbors as "selfish."

"When I say selfish, it's because of all the other children that could be potentially hurt," she said.

Part of the problem rests with the very success of vaccines, noted Peg Crowley, the director of the Community Health Center where Isabella Parker got her shots. This generation of parents doesn't recall how sick a toddler can be with measles, so they focus on the very small risk associated with vaccines.

"One of the biggest issues is that parents think they're safe to make this decision," said Crowley, who recalls quarantines from her own childhood. "There's no memory of the consequences of these diseases. We take our protection sometimes for granted."

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